Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
	)	

COMMENTS OF PUERTO RICO TELEPHONE COMPANY, INC.

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Puerto Rico Telephone Company, Inc. ("PRT") hereby submits these Comments in response to the Federal Communications Commission ("Commission") Wireline Competition Bureau's ("Bureau") Public Notice announcing the availability of the Connect America Fund Phase II Cost Model ("CAM") version 3.2.[1]

I. INTRODUCTION AND EXECUTIVE SUMMARY

PRT appreciates the Bureau's modest effort in the latest version of the CAM "to reflect the unique circumstances and operating conditions in the non-contiguous areas of the United States,"[2] but the revisions to the model do little to address the systemic flaws in the CAM that make it an inappropriate mechanism for determining Connect America funding for insular areas, such as Puerto Rico. As detailed in PRT's Legal and Policy White Paper,[3] there remain serious legal shortcomings in the process the Bureau has used to develop the CAM. Despite the Bureau's very recent decision to make available the processing source code for the CAM, the

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1 *See Wireline Competition Bureau Announces Availability of Version 3.2 of the Connect America Fund Phase II Cost Model, and Illustrative Results; Seeks Comment on Several Modifications for Non-contiguous Areas*, Public Notice, WC Docket No. 10-90, DA 13-1846 (rel. Aug. 29, 2013 WCB) ("Notice").

2 *Id.* at 1.

3 *See* White Paper of Puerto Rico Telephone Company, Inc. on Legal and Policy Issues With Applying the CACM to Insular Areas at 17-24 *attached to* Letter from Tom J. Navin, Counsel to PRT, to Chairwoman Mignon Clyburn, Commissioner Ajit Pai, Commissioner Jessica Rosenworcel, Federal Communications Commission, WC Docket Nos. 10-90, 05-337 (filed July 17, 2013) ("PRT Legal and Policy White Paper").

modeling process remains flawed because not all parties to the proceeding have had access to "all underlying data, formulae, [and] computations," as required by the Commission to properly assess the model.[4] As such, use of the CAM, a proprietary product of CostQuest developed by an exclusive coalition of price cap carriers, would still be considered an unlawful subdelegation of the Commission's decision-making power to an outside entity. Without access to all assumptions, formulae, and data underlying the CAM, the Bureau's use of the model necessarily violates both the subdelegation doctrine and the notice and comment requirements of the Administrative Procedure Act ("APA").

Beyond these legal infirmities, and as PRT has repeatedly detailed,[5] the CAM fails to "adequately account[]" for the costs and operational challenges faced by insular service providers.[6] Despite attempting (unsuccessfully) to account for the undersea cable costs of insular areas, the model still relies on assumptions regarding take rate, and thus cost recovery, that simply do not reflect the reality of service provision in insular areas. Moreover, the CAM is based upon National Broadband Map data that are widely acknowledged—including by the very parties providing the data—to be inaccurate. As a result, while the Bureau plans to increase universal service support for price cap carriers by 67 percent nationwide, the proposed CAM would severely cut support to insular areas which the Commission itself has identified repeatedly as most in need of support for broadband Internet access.[7] Because the CAM suffers from incurable procedural infirmities, and because the CAM "does not provide sufficient support" to

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4 *Connect America Fund*, Report and Order, WC Docket No. 10-90, 26 FCC Rcd 17663, ¶ 185 (2011) ("*2011 USF Transformation Order*").

5 *See, e.g.*, Comments of Puerto Rico Telephone Company, WC Docket No. 10-90 (filed July 9, 2012); PRT Legal and Policy White Paper.

6 *2011 USF Transformation Order*, ¶ 193.

7 *Eighth Section 706 Report*, GN Docket No. 11-121, 27 FCC Rcd 10342, ¶ 56 (2012) ("*Eighth Section 706 Report*").

insular areas, the Bureau should either adopt a model that accurately represents the funding needs of insular areas or it should maintain the frozen funding levels for insular areas consistent with the express delegation from the Commission in the *2011 USF Transformation Order*.[8]

II. ACTION ON THE CAM WOULD EXCEED THE BUREAU'S DELEGATED AUTHORITY AND VIOLATE THE SUBDELEGATION DOCTRINE.

As PRT explained in detail in its Legal and Policy White Paper, there are serious legal shortcomings to the process the Bureau has used to develop the CAM.[9] Indeed, because of the lack of transparency and access to the assumptions underlying the model, any actions taken based upon the current proposed model would be contrary to the clear delegation of authority to the Bureau from the Commission. Moreover, the Commission's reliance on CostQuest to develop the model, which is based upon proprietary models previously developed by CostQuest, violates the "subdelegation doctrine" by delegating Federal decision-making authority to private third party and does not comport with the notice and comment requirements of the Administrative Procedure Act. Accordingly, the Commission should not use the CAM to allocate CAF support to insular areas.

A. Adoption of the CAM Would Exceed the Bureau's Delegated Authority Because of the Lack of Public Access to the CAM and its Underlying Data.

The Bureau is not authorized to adopt a CAM absent full open access to the model, including its underlying data and assumptions. In the *2011 USF Transformation Order*, the Commission unambiguously stated that the "model and all underlying data, formulae, computations, and software associated with the model must be available to all interested parties for review and comment."[10] While the Bureau took a step toward providing the requisite level of

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8 *2011 USF Transformation Order*, ¶ 193.

9 *See* PRT Legal and Policy White Paper at 17-24.

10 *2011 USF Transformation Order*, ¶ 185.

openness recently when it announced availability of processing source code for the CostQuest LandLine ("CQLL") and CQMM applications,[11] this attempt at transparency is still far from the level of complete openness required by the Commission's delegation of authority to the Bureau. These two components, while key, do not give the full picture regarding the assumptions, data, and inputs that went into the development of the CAM. Releasing the source code of the modules is not the same thing as releasing the actual modules. Consider the difference between having the schematic diagrams for a HDTV and actually having the TV. With the schematics you could, given the right inputs, equipment, and time, build a HDTV but until then you could not watch anything on the schematics. Having the source code does not allow commenters fully to test changes in input values, understand the interactions between the various assumptions and inputs, and ultimately evaluate whether the outputs of the CQLL and CQMM are reasonable.

B. Use of the CAM for Insular Areas Would Be an Unlawful Subdelegation of Decision-Making Power to CostQuest, and Violative of the APA's Notice and Comment Requirements.

Use of the CAM developed by CostQuest would violate the "subdelegation doctrine" identified by the D.C. Circuit because it would be a subdelegation of the Commission's decision-making authority to build and operate the model for insular areas even though neither the Communications Act nor any other statute empowers the Bureau to do so. Federal agency officials legally "may not subdelegate [their decision-making authority] to outside entities—private or sovereign—absent affirmative evidence of authority to do so," because "[a] general delegation of decision-making authority to a federal administrative agency does *not*, in the ordinary course of things, include the power to subdelegate that authority beyond federal

[11] *See Wireline Competition Bureau Announces Availability of Processing Source Code for the Connect America Cost Model's Network Topology Applications*, WC Docket No. 10-90, DA 13-1752 (rel. Aug. 13, 2013).

subordinates."[12] The subdelegation doctrine performs an important democratic role by ensuring that the power of the government remains vested in appropriately accountable government decision-makers.[13]

At the core of the CAM lies the ABC Cost Model originally developed by CostQuest as a paid consultant for, and at the direction of, the nation's largest price cap carriers—all but one of which are identified in Table 1, below, as benefitting greatly from the adoption of the CAM version 3.2.[14] Although the Bureau has requested certain tweaks and modifications to the model, the model remains "a proprietary software application *owned* by CostQuest."[15] As creator and owner of the model, CostQuest—not the Bureau—has crafted the hidden algorithms, input sheets, and toggle formulae that power the CAM. In doing so, CostQuest has necessarily made decisions and compromises that have policy consequences, and which were not done under the direction or supervision of the Bureau. Indeed, as much of the model was completed prior to the Bureau ever contracting with CostQuest, there can be no argument that the CAM is a product of

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12 *U.S. Telecom Ass'n v. F.C.C.*, 359 F.3d 554, 566 (D.C. Cir. 2004) (citing *Shook v. District of Columbia Fin. Responsibility & Mgmt. Assistance Auth.*, 132 F.3d 775, 783–84 (D.C. Cir. 1998)).

13 *Id*. at 565-566 (citing *NARUC*, 737 F.2d at 1143, n. 41). In addition, the delegation of authority to outside parties increases the "risk that these parties will not share the agency's national vision and perspective and thus may pursue goals inconsistent with those of the agency and the underlying statutory scheme." *Id*. at 566 (internal quotations omitted). "In short, subdelegation to outside entities aggravates the risk of policy drift inherent in any principal-agent relationship." *Id*.

14 *See infra* Tbl. 1.

15 *Connect America Fund, Third Supplemental Protective Order*, 27 FCC Rcd 15277, ¶ 4 (WCB 2012) (emphasis added). The portion of USAC's website that hosts the CAM also emphasizes that the CAM "system is the property of CostQuest" and that "CostQuest reserves all rights in CAM." *See* "Connect America Cost Model: Developed by CostQuest Associates," USAC, https://cacm.usac.org/. Likewise, the CAM Model Methodology has been copyrighted by CostQuest. *See See* "Connect America Cost Model (CACM) Model Methodology, CACM Version 3.2" at 2, http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0829/DOC-323071A1.pdf (rev. Aug. 27, 2013) ("Methodology").

the Bureau. It makes no difference, in this context, that the Bureau has made elements of the source code available if it ultimately has not controlled the development of that code.

Contrary to assertion of the USTelecom, the Bureau did more than use "CostQuest to mechanically perform calculations with respect to the development of a cost model."[16] Here, the development of the model is itself the policy decision and was the task expressly delegated to the Bureau by the Commission. CostQuest has done more than "to provide the agency with factual information" or "advice and policy recommendations."[17] The power to build the model for broadband support is the power to ultimately determine the amount and extent of such support. The Bureau may not "merely 'rubber-stamp' decisions" by CostQuest "under the guise of seeking [CostQuest's] 'advice', nor will vague or inadequate assertions of final reviewing authority save" the Bureau's "unlawful subdelegation."[18]

In addition to be an unlawful subdelegation, the use of CostQuest's model violates the APA's notice and comment requirements. The D.C. Circuit explained long ago that "[i]n order to allow for useful criticism, it is especially important for the agency to identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules."[19] As described above, the CAM suffers from a terminal lack of transparency. Indeed, apparently even the Bureau lacks fundamental information about the model as—until

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16 Letter from Jonathan Banks, Senior Vice President Law & Policy, USTelecom, to Marlene H. Dortch, Secretary, FCC, WC Docket Nos. 10-90, 05-337, at 3 (filed Aug. 16, 2013).

17 *Id.* (*citing U.S. Telecom Ass'n*, 359 F.3d at 567-68).

18 *U.S. Telecom Ass'n*, 359 F.3d at 568 (internal citations omitted).

19 *Conn. Light & Power Co. v. Nuclear Regulatory Comm'n*, 673 F.2d 525, 530 (D.C. Cir. 1982); *see also Am. Radio Relay League, Inc. v. F.C.C.*, 524 F.3d 227, 236 (D.C. Cir. 2008) (remanding a Commission rule because of the agency's failure to provide the public with access to unredacted technical studies and data that it employed in reaching its decisions).

recently—rather than answering questions about the underlying assumptions, the Bureau has advised insular carriers to seek answers "through CostQuest's Help Desk ticketing process."[20]

USTelecom argues that the sufficiency of the model is evidenced by the fact that some carriers have been able to propose modifications to address their concerns. But this misses the mark: carriers must not only be able to identify obvious oversights, like the failure to consider the costs of undersea cable transmission, but also must be able to examine all of the more subtle data and decisions that in aggregate determine the overall results of the model. Again, the opening of the CQLL and CQMM source code is insufficient to cure this fault, as even beyond these two applications there are countless hidden algorithms, assumptions, and inputs inherent to the model that rely on data and deliberations that are not available to the public or other potentially affected entities.[21] Without full access to all of these factors, it is impossible for the Commission truly to give fair notice and receive informed comment on the policy determinations being made in this proceeding, and thus reliance upon the CAM is legally untenable.

III. THE CAM FAILS TO ADEQUATELY ADDRESS INSULAR AREAS AND SHOULD NOT BE USED TO DETERMINE SUPPORT FOR PUERTO RICO.

A. The Commission Recognizes that Section 254(b)(3) Compels Universal Support for Puerto Rico to Ensure Comparable Communications.

The Commission has long recognized that there are unique challenges to service provision in insular areas, and it has attempted to address these challenges through its universal service programs. In the *2010 Insular Order*, the Commission agreed that Section 254(b)(3) of the Communications Act requires the agency to ensure "reasonably comparable rates and

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[20] See Letter from Dania Ayoubi, Attorney Advisor, Wireline Competition Bureau, to Marlene Dortch, WC Docket No. 10-90, at 2 (filed June 10, 2013). It should be noted that since the filing of PRT's Legal and Policy White Paper, CostQuest has started directing questions about the model from representatives of the insular carrier back to the Bureau for resolution, presumably as an eleventh-hour, ineffectual reaction to this clear legal infirmity.

[21] *See* PRT Legal and Policy White Paper at 23-24 (outlining several examples).

services" for consumers in insular areas.[22] In that Order, the Commission also acknowledged a telephone subscribership rate that fell approximately 21 percent below the national average as unacceptable and warranting universal service aid.[23]

Comparatively, the Commission determined in the *Eighth Broadband Progress Report* that broadband was not being deployed "'to all Americans' in a reasonable and timely fashion" because 6 percent of Americans do not have access to broadband.[24] Insular areas, in particular, lag far behind the rest of the country in voice and broadband deployment, are more expensive to serve than non-insular areas, and are among the poorest populations in the country, which invariably results in low customer adoption rates.[25] The situation is most dire in the U.S. territories, where the Commission has recognized that the percentage of unserved Americans "is approximately nine times the national average."[26] In Puerto Rico, specifically, the Commission has observed that more than half the population lacks access to broadband Internet access

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22 *See High-Cost Universal Service Support*, WC Docket Nos. 05-337, 03-109, CC Docket No. 96-45, Order and Notice of Proposed Rulemaking, 25 FCC Rcd 4136 ¶ 22 (2010) (*2010 Insular Order*).

23 *See id.*, ¶ 20 (recognizing moving from a subscriber rate deficit of 21 percentage points to one of just over 6 percentage points, although not fully satisfactory, as "a significant success of the universal service program").

24 *Eighth Section 706 Report*, ¶ 1.

25 *See, e.g.*, *Eighth Section 706 Report*, App. C (presenting data highlighting how underserved Puerto Rico is compared to the rest of the country); Letter from Thomas J. Navin, Outside Counsel, Puerto Rico Telephone Company, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 (filed Sept. 12, 2012) (updating the record with the troubling data from the Eighth Broadband Progress Report); Comments of Puerto Rico Telephone Company, WC Docket No. 10-90 (filed Aug. 24, 2011) ("The Commission has recognized that most insular areas, like Puerto Rico, currently lag dramatically behind the rest of the nation in telephone and broadband subscribership and deployment."); Comments of Virgin Islands Telephone Corporation, GN Docket No. 11-16 (filed Mar. 2, 2011) (noting low broadband deployment in the U.S. Virgin Islands); Comments of Public Services Commission of the U.S. Virgin Islands, WC Docket No. 10-90, at 4-7 (filed Jul. 12, 2010) (discussing limitations on telecommunications infrastructure in the territory and challenges to deployment in the Virgin Islands); Comments of the Virgin Islands Telephone Corporation, CC Docket No. 96-45, at 15 (filed Nov. 3, 2000) (describing low penetration rates in the U.S. Virgin Islands).

26 *Eighth Section 706 Report*, ¶ 56.

services meeting the benchmark speed of 4 Mbps downstream and 1 Mbps upstream—a disparity of approximately 45 percent compared to the national average.[27] Additionally, recent data submitted to the Commission by Connected Nation report that less than 1 percent of schools and libraries in Puerto Rico have access to broadband with download speeds of 100 Mbps or greater.[28] Because the Connect America Fund is the only mechanism intended by the Commission to address needs for 4 Mbps/1 Mbps broadband Internet access in price cap LEC territories, any failure by the Commission to provide Connect America Fund broadband support in Puerto Rico would necessarily violate its obligation under Section 254(b)(3) and prior Commission decisions addressing "reasonable comparability."

Consistent with its obligations under Section 254(b)(3), the Commission instructed the Bureau to "consider the unique circumstances" of non-contiguous U.S. and insular areas "when adopting a cost model" for the Connect America Fund.[29] The Commission directed the Bureau to "consider whether the model ultimately adopted adequately accounts for the costs faced by carriers" in insular areas, and if the Bureau determines that the cost model "does not provide sufficient support to any of these areas," to maintain existing support levels for those areas.[30] To satisfy this clear instruction from the Commission, the Bureau must ensure that a meaningful portion of the $1.8 billion in Connect America Fund Phase II support is allocated to insular areas, including Puerto Rico, whether through the CAM or through maintained frozen support.

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27 *Eighth Section 706 Report*, App. C.

28 *See* Notice of *Ex Parte* Communication of Connected Nation, WC Docket No. 13-184 (filed Sept. 10, 2013).

29 *2011 USF Transformation Order*, ¶ 193.

30 *Id.*

B. The CAM Violates Section 254(b)(3) and Commission Orders Addressing the Costs and Challenges of Service Provision in Insular Areas.

Contrary to Section 254(b)(3) of the Act's requirements and the express delegation of authority to the Bureau in the *2011 USF Transformation Order,* CAM version 3.2 would slash Puerto Rico's support level by nearly 90 percent, from more than $36 million today, to less than $3.68 million under the CAM. The U.S. Virgin Islands would see a comparable decrease in funding, from approximately $16 million today to less than $1.7 million under the CAM. Indeed, as illustrated in the table below, of the three U.S. territories included in the Bureau's "illustrative results" for CAM version 3.2, only Micronesia would actually see an increase in funding from the approximately $683,000 in frozen high cost support it receives today (and under previous versions of the CAM, it too would have seen an appreciable decrease in support[31]), while mainland carriers generally would enjoy a significant increase in funding.

[31] *See, e.g.*, Connect America Cost Model v3.1.4 Illustrative Results, *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-321775A1.xlsx (projecting funding amount of $652,157, a decrease of 4.5 percent from current levels).

Table 1. Proposed Change in Support Level Under CAM v3.2 Compared to Frozen High Cost Support

	Annual Funding		
Holding Company Name	**USAC Frozen HC Support**	**CAM v3.2 - ACF 9%**	**% Change**
ACS	$ 19,694,208	$ 15,454,299	-21.53%
AT&T	$ 176,308,944	$ 527,576,945	199.23%
Cincinnati Bell Telephone	$ 769,644	$ 2,054,354	166.92%
CenturyLink	$ 347,491,032	$ 476,997,569	37.27%
Consolidated	$ 25,321,980	$ 6,945,221	-72.57%
Fairpoint	$ 33,707,436	$ 37,401,548	10.96%
Frontier	$ 149,687,412	$ 341,292,013	128.00%
Micronesian Telecomm	$ 683,364	$ 1,416,053	107.22%
Hawaiian Telecom	$ 1,968,816	$ 3,439,713	74.71%
PRTC	$ 36,053,856	$ 3,685,361	-89.78%
Vitelco	$ 16,360,728	$ 1,697,263	-89.63%
Verizon	$ 111,893,820	$ 157,179,128	40.47%
Windstream	$ 97,858,908	$ 174,862,685	78.69%

The fact that the model's illustrative results show an approximately 90 percent *decrease* in support for Puerto Rico and the U.S. Virgin Islands despite the Commission's recognition that "[a]pproximately 54 percent of Americans residing in U.S. Territories are without access to fixed broadband . . . compared to only 6 percent of Americans overall,"[32] should alone be sufficient to demonstrate that the model as proposed "does not provide sufficient support" to these areas as required under section 254(b)(3).[33] These steep cuts are made more striking by the fact that the support budget for price cap carriers increases by 67 percent overall (from $1.076 billion to $1.8 billion), with all but one of the contiguous U.S. price cap carriers that funded the original development of CostQuest's models receiving significant increases in support. Obviously, any CAM in which Puerto Rico, with one of the nation's lowest broadband deployment rates, sees its

32 *Eighth Section 706 Report*, ¶ 56.

33 *2011 USF Transformation Order*, ¶ 193.

support eviscerated while other carriers, with much higher current deployment rates, receive over a $100 million in additional annual support fails both section 254(b)(3) and the Commission's stated objective to ensure the "universal availability of modern networks capable of providing voice and broadband service to homes, businesses, and community anchor institutions."[34]

Based on the latest illustrative results, it should be clear that the proposed CAM does not adequately account for the "unique circumstances" of insular service provision in the territories, as required by the Commission.[35] This is because, as explained in PRT's Legal and Policy White Paper, the CAM is based on a platform designed to model broadband deployment and operation in the 48 contiguous United States, and therefore contains numerous assumptions and estimates that don't hold true for insular areas.[36] While the latest version of the CAM attempted to address one of these shortcomings—the previous failure to consider the costs of undersea cable capacity—there are still numerous ways in which the model fails to accurately represent the needs of insular service areas. Perhaps most significantly, the model assumes an 80 percent take rate, which simply is unrealistic for insular territories like Puerto Rico, where extremely low personal income levels result in actual take rates ranging from 25 to 35 percent in areas where broadband currently is available. This exaggerated take rate assumption drives down the per location cost modeled by the CAM far lower than is reasonable.

Moreover, the CAM relies upon the National Broadband Map ("NBM") for data regarding broadband deployment, however PRT has shown that this data does not accurately depict the current state of broadband deployment in Puerto Rico.[37] For example, PRT has

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34 *Id.*, ¶ 17.

35 *Id.*

36 PRT Legal and Policy White Paper at 7-14.

37 *See* Letter from Tom Navin, Counsel to Puerto Rico Telephone Co., Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 (filed Aug. 23, 2013); Letter from Mario R.

certified that thousands of locations listed by the NBM as served with broadband Internet at speeds of at least 3 Mbps downstream and 768 upstream actually only have dial-up Internet access available. Because the CAM relies on the seriously flawed NBM, it significantly underestimates the number of locations in Puerto Rico requiring CAF support.

For several reasons, the NBM data lacks the accuracy necessary to be used in the calculation of Puerto Rico's support amount. First, the data contained in the NBM overstates the number of households with broadband connectivity. This is discussed in the *Official April 2013 Update Submission To The National Telecommunications And Information Administration Under The State Broadband Initiative Grant Program For The Commonwealth Of Puerto Rico*, which is the most recent filing of data by Connect Puerto Rico for the NBM. In it, Connect Puerto Rico notes,

> …due to the nature of the SBI data collection methodology as defined by the NTIA and based on both census block geographic units and street segment data, the estimates of broadband availability derived from provider-validated data may include an overstatement of the actual number of households with broadband availability. Under the census block-based data collection method, a provider will typically report broadband availability for an entire census block whether its network is present across the whole or only a subset of that census block. This potential overestimation at the census block level can be amplified as the data is aggregated across the entire island.[38]

This quote acknowledges that the underlying data in NBM is likely overstated and that that overstatement becomes amplified when the entire island is considered. The fact that this flaw is

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Barrera, Chief Operating Officer, Puerto Rico Telephone Co., Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 (filed Aug. 20, 2013).

[38] Connect Puerto Rico, *Official April 2013 Update Submission to The National Telecommunications and Information Administration Under the State Broadband Initiative Grant Program for the Commonwealth of Puerto Rico* at 14 (April 1, 2013) *available at* http://www2.ntia.doc.gov/files/broadband-data/PR-NBM-CSV-Dec-2012.zip (File name PR_Methodology_2013_04_01.pdf).

understood and clearly-articulated at the level of the underlying data generation makes the NBM a poor choice for use in funding decisions.

Not surprisingly, a number of parties have publicly disputed the estimates of broadband availability and speed found in the NBM data. For example, the Wisconsin State Telecommunications Association wrote a report entitled, "Wisconsin's Broadband Internet Availability" which heavily questioned both the speed and availability of broadband for Wisconsin contained in the NBM. The report noted that,

> The National Broadband Map reliance on data that includes "advertised speed" may produce misleading and inaccurate rankings of broadband availability, access, and use because advertisements covering a media market will not and do not translate to actual telecommunications company service availability. They also do not take into account the fine print that may appear in advertisements such as "speeds up to" or "service not available in all areas."[39]

Various parties have communicated directly with the Commission regarding inaccuracies in the NBM. The Governor of Mississippi sent a letter to the Commission, contradicting the information found in the NBM for his state. In that letter, the Governor writes that the NBM, "grossly misrepresents the wireline broadband coverage in Mississippi," which could result in, "unjustly depriv[ing] the citizens of Mississippi of the funding that would be available," if the data were accurate.[40]

In its comments on the Connect America Fund, Windstream also disputes the broadband availability portrayed by the NBM. In those comments, Windstream claims that the NBM shows

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[39] *See* Wisconsin State Telecommunications Association, *Wisconsin's Broadband Internet Availability* at 9 (Jan. 2012) *available at* http://c.ymcdn.com/sites/www.wsta.info/resource/resmgr/wisconsin's_broadband_intern.pdf.

[40] *See* Letter from Phil Bryan, Governor, State of Mississippi to Julius Genachowski, Chairman, Federal Communications Commission at 1-2, *attached to* Comments of the Mississippi Office of the Governor, WC Docket No. 10-90 (filed Jan. 9, 2013).

unsubsidized competitors in census blocks in which none actually exist. Specifically, Windstream states that,

> Windstream has gathered aggregated records of customer churn and number porting and has determined that there are a sizeable number of areas that are shown by the National Broadband Map as being served in whole or in part by an unsubsidized competitor but for which Windstream has received zero requests in the past two years from customers for any number ports that include cancellation of the customer's Windstream broadband service. Windstream submits that the complete absence of such a porting request over a reasonable historical period in a given area establishes, at the least, a presumption that there is no competitor providing 3/768 service in the area, and thus any locations within that area should be eligible for CAF Phase I support if the incumbent is not offering access to 4/1 broadband. [41]

In addition to disputing the availability of broadband, commenters have also questioned the speeds shown in the NBM data. For example, the Rural Associations submitted comments on the Connect America Fund pointing out that the collection methodology may also overstate the speeds in a census block. According to their comments, the map may report that an entire census block is served by faster speeds when the majority of the area is served by a lesser speed.[42]

Estimates of broadband availability in the NBM seem overstated for Puerto Rico when compared to other data sources. The Commission produces a report entitled the Internet Access Services Report which uses information contained in responses to the FCC Form 477 regarding Local Telephone Competition and Broadband Reporting.[43] As of June 30, 2012, the Internet

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41 *See* Comments of Windstream Corporation at 2-3, WC Docket No. 10-90 (filed Jan. 9, 2013).

42 *See* Comments of NCTA, NECA, OPASTCO, and WTA at 3, WC Docket No. 10-90 (filed Jan. 9, 2013).

43 *See, e.g.*, Federal Communications Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, *Internet Access Services: Status as of June 30, 2012* (May 2013) *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-321076A1.pdf.

Access Services Report shows only 20.8 percent of the connections in Puerto Rico with download speeds greater than 3 Mbps and upload speeds greater than 200 kbps.[44] In contrast, the NBM data for Puerto Rico as of December 31, 2012 claims that 94.2 percent of the population is covered by download speeds greater than 3 Mbps and upload speeds greater than 768 kbps.[45] This means that the NBM has over four times as many connections served with higher speed then the Internet Access Services Report. In light of the numerous questions raised about the veracity of the NBM data, given the huge disparity between the Form 477 data and the NBM figures, the Commission should not accept the NBM statistic about Puerto Rico as being reliable.

Given the likely inaccuracy of the NBM's data with regard to Puerto Rico, it should not be used in determining funding amounts for the island. This conclusion is further supported by data recently filed by PRTC under the CAF Phase I Interim Support process that shows that (1) 7,521 census blocks containing, according to the U.S. Census Bureau, at least one household not listed in the NBM data for Puerto Rico and (2) 593 census blocks listed in the NBM as having speeds in excess of 10 Mbps downstream and 768 Mbps upstream which actually only have dial-up internet access available. As the above discussion indicates these errors are the result of problems with the methodology used to develop the NBM data and, therefore, these data should not be used in determining funding amounts for the island.

The Bureau has made some progress in improving the CAM by including some calculations related to undersea cable costs in the latest version (although, as discussed below, this modeling also is flawed). In the Notice, the Bureau seeks comment on incorporating in the

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44 *See id.* at 42, Tbl. 18.

45 *See* National Broadband Map, "Analyze: Summarize: State: Puerto Rico" http://www.broadbandmap.gov/summarize/state/puerto-rico (last visited Sept. 12, 2013).

next version of the CAM the plant mix values provided by PRT in its proposed "Broadband Cost Model: Puerto Rico" ("BCMPR").[46] The Commission absolutely should use the accurate plant mix values provided by PRT in its final model. As shown in the tables below, inclusion of the PRT plant mix inputs would increase the model-derived funding to the territory by 361 percent, highlighting the sensitivity of the result to small changes in input values and the necessity of using the most accurate inputs and assumptions for insular areas.

Table 2 – PRT Proposed Plant Mix Input

		Dist & FDR			IOF		
State	**Density**	**Aerial**	**Buried**	**Undgd**	**Aerial**	**Buried**	**Undgd**
PR	Rural	43.00%	27.00%	30.00%	28.00%	55.00%	16.00%
PR	Suburban	29.00%	11.00%	60.00%	26.00%	53.00%	20.00%
PR	Urban	27.00%	10.00%	63.00%	25.00%	52.00%	23.00%

Table 3 – Effect of PRT Plant Mix on CAM v3.2 Result

FCC Illustrative CAM v3.2 Scenario 2.1 $55.40 Lower Threshold, $119.472 Alt Tech Cutoff, $174.872 Upper Threshold 9% COM			
ID	Description	Funding	Locations
xx	CAM v3.2 Baseline	$ 3,685,361	15,617
PRT15	CAM v3.2 Baseline w/ updated PRT Plant Mix	$ 13,323,931	57,347

While using accurate plant mix values will improve the CAM, and the Bureau should incorporate these and all other BCMPR values in its next version, this will not cure the numerous other structural problems with the model.

C. The Revised CAM Does Not Adequately Account for the Costs of Undersea Cable Capacity.

The main substantive revision to the CAM in version 3.2 is the addition of cost calculations for undersea cable capacity. The failure to consider the cost of undersea cable transmission to Internet peering points was one of the significant oversights identified by PRT in

[46] Notice at 9 (*citing* Letter from Tom Navin, Counsel to PRTC, to Marlene H. Dortch, Secretary, FCC, WC Docket Nos. 1090 and 05-337 (filed Jan. 18, 2013) ("PRT BCMPR Filing")).

previous versions of the CAM.[47] PRT is encouraged by the Bureau's effort to attempt to model insular areas, but, like the rest of the CAM, the undersea cable module includes unsupported and undisclosed assumptions and generalizations that appear to underrepresent the real costs and challenges related to middle mile transmission in insular areas. Without the ability to cross-examine the black box assumptions, neither the Bureau nor any party to the proceeding can create a credible record for a reviewing court to examine. Nevertheless, PRT offers the following observations on the undersea cable module and the questions it raises.

1. The Undersea Cable Module Relies on Unsupported Generalizations About Service Provision in Insular Areas.

Despite the complexity of constructing an undersea cable system, the CAM's cost analysis breaks it down into eight total inputs by making five general assumptions.[48]

- First, the model assumes that the cost factors for an undersea cable are identical to that of terrestrial underground cable.[49] The Bureau has provided no analysis or explanation to support this assumption; however, data submitted by Alaska Communications Systems, Inc. indicates that the maintenance and operating cost of undersea cables is higher than that of terrestrial cables.[50]
- Second, the model adopts a uniform investment cost per foot for each cable to an insular area.
- Third, the model assumes that the undersea cables will run in a direct route from the insular area to the contiguous state with the nearest peering location.
- Fourth, the model assumes that the cost of landing stations will be identical in Alaska, Oregon, Guam, Hawaii, Florida, Puerto Rico and the Virgin Islands.

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47 *See* PRT Legal and Policy White Paper at 9-10.

48 The model estimates undersea cable investment using inputs for undersea cable footage, cable cost per foot, cable labor per foot, landing station land cost, landing station building cost, cable station circuit equipment, cable station circuit labor cost, and percentage in use.

49 *See* Methodology at 55 ("Investments are converted into costs based upon the Underground Fiber Optic Annual Charge Factor").

50 *See* Letter from Leonard A. Steinberg, General Counsel and Corporate Secretary and Richard R. Cameron, Assistant Vice President and Senior Counsel, Alaska Communications Systems Group, Inc. to Marlene H. Dortch, Secretary, FCC at 22-24, WC Docket Nos. 10-90, 05-337 (filed July 30, 2013) ("ACS July 30 Letter").

- Fifth, the model assumes that take rates are identical across the country in its development of the undersea cable capacity requirements of the non-contiguous carriers. As has been reported repeatedly by these carriers, an 80 percent take rate greatly overestimates the percentage of customers that actually take or would reasonably be expected to take broadband service in insular areas.

By relying on generalizations about all insular carriers, the revised CAM repeats the failure of earlier versions of the model by not reflecting the "unique circumstances" that apply to each insular service area. As such, the module fails to capture the costs that an actual insular carrier would face.

2. The Undersea Cable Module Lacks Transparency Necessary to Fully Evaluate Its Results.

One challenge in evaluating the undersea cable module continues to be the lack of transparency in the underlying assumptions and calculations that has plagued this proceeding from the start. For example PRT and ACS have each filed analyses that estimate the per customer cost of undersea cable transport for broadband.[51] In PRTC's case, the Company estimated the cost per subscriber based on the existing contracts it has with three undersea cable providers. ACS, on the other hand, based its per location cost estimate on the cost it incurred from 2008 to 2009 building a cable system from Alaska to Oregon. In both cases, the cost per subscriber shown by the insular carriers was significantly greater than that estimated by the model. Although the full details of the PRT and ACS analyses were provided to the Commission and interested parties for examination, the full CAM calculations have not been provided. The detailed calculations and intermediate results contained within the proprietary CostQuest Middle Mile ("CQMM") module are not available to parties to the proceeding. As such, it is impossible to understand with any degree of certainty why the CAM and company-specific estimates differ to such a large degree.

[51] *See* PRT BCMPR; ACS July 30 Letter

3. The Undersea Cable Module's Cost Estimates Do Not Realistically Model Actual Costs and Business Practices in Puerto Rico.

The Notice acknowledges that for many insular carriers, it would be less expensive to obtain capacity on existing third party undersea cables through the purchase of indefeasible rights of use ("IRUs") rather than constructing new cable systems.[52] Thus, in the case of PRT, the CAM correctly assumes that the Company will continue to purchase IRUs on existing cables, as well as those coming on line in the near future. PRT agrees that for some insular carriers, including PRT, it is reasonable to assume that the Company will continue to purchase capacity on third party cables rather than to construct its own cable. Because Puerto Rico lies on the path of existing cables that happen to have existing capacity, it would be uneconomical for PRT to build its own cable system. Following this logic, it would be most appropriate for the undersea cable cost component of the model to use an estimate of the market-based price of purchasing such capacity. Curiously, however, the CAM assumes that PRTC will purchase capacity on third party cables but estimates the costs based on a hypothetical build rather than the price of purchasing IRUs for the required capacity.

This underscores the current model's inability to accurately represent any real world costs in insular areas when it relies on generalizations to simulate a hypothetical carrier. While forward-looking hypothetical cost estimation may generally be an appropriate mechanism for modeling, it makes no sense to use forward-looking costing for components of a model that the carrier is unlikely to build during the modeled period. Instead, the cost of undersea cable transport for those carriers that are expected to continue to purchase capacity from third party providers should be based on the market-determined price per Gbps—accounting for the increased demand expected due to the combined efforts of the Commission and carriers to

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[52] Notice at 4.

increase broadband penetration and traffic in insular areas as well as the world-wide upward trend in broadband usage. As such estimates are currently unavailable, the best currently available estimate of the cost of undersea cable transport for those carriers that will continue to purchase third party IRUs is per Gbps price they currently pay.

Importantly, it would be expected that the price per Gbps for IRUs to a portion of cable capacity should be somewhat less than the cost of constructing an entirely new cable. However, as the BCMPR and the analysis below indicates, the price of the IRUs, maintenance and operating cost PRTC currently pays corresponds to a per customer location passed monthly cost that is much higher than the $0.72 cost per customer location estimated by the CAM. This significant and surprising disparity in estimates further suggests that there are fundamental flaws to the assumptions and inputs to the CAM that do not accurately model insular areas.

Based on the data contained in the Public Notice and the revised CAPEX V16 input file available on the CAM website, PRT was able to determine the difference between the undersea cable cost per subscriber location estimated by the CAM and by the BCMPR. As reported in the Notice, the CAM version 3.2 estimated the undersea cable cost per subscriber location at $0.72.[53] Using the actual costs PRTC incurs with undersea cable providers, the BCMPR as filed with the Commission estimated a cost of $3.40 per location. The table below shows the calculations recreated by PRT to arrive at the cost per location for Puerto Rico found in the CAM.

[53] Notice at 7.

Table 4 – CAM Calculation of Undersea Cable Cost per Subscriber Location

		Source		
1	Customer Locations	CAM 3.2		1,670,044
2	Take Rate	CAM 3.2		80%
3	BHOL	CAM 3.2		0.44
4	Demand GBPs	CAM 3.2 & 1x2x3		587.9
5	Annual Cost per GBPS	6 / 4	$	24,545.45
6	Total Annual Cost	7 x 8	$	14,429,180.16
7	Customer Locations Passed	CAM 3.2		1,670,044
8	Annual Cost per Location	9 x 12	$	8.64
9	Monthly Cost per Location	CAM 3.2	$	0.72

The CAM estimates the total annual cost allocated to broadband resulting from the construction of a redundant undersea cable system to be $14,429,180. In contrast, based on what PRT currently pays its undersea cable providers per Gbps of capacity ($113,318), the BCMPR estimates the total annual cost for the required undersea capacity estimated by the CAM 3.2 to be $66,615,106 or almost five times what the CAM estimates. As illustrated in the table below, inserting the estimated annual cost from the BCMPR into the CAM version 3.2 calculation of per location cost yields a cost estimate of $3.32 per location—only $0.08 different from the $3.40 cost estimated by the BCM-PR.

Table 5 – Calculation of Undersea Cable Cost per Location Using BCMPR Costs

		Source		
1	Customer Locations	CAM 3.2		1,670,044
2	Take Rate	CAM 3.2		80%
3	BHOL	CAM 3.2		0.44
4	Demand GBPs	CAM 3.2 & 1x2x3		587.9
5	Annual Cost per GBPS	BCM PR	$	113,318.85
6	Total Annual Cost	4 x 5	$	66,615,106.25
7	Customer Locations Passed	CAM 3.2		1,670,044
8	Annual Cost per Location	6 / 7	$	39.89
9	Monthly Cost per Location	8 / 12	$	3.32

If it is assumed, as the Bureau does, that PRT will continue to rely on existing cable capacity as opposed to constructing a wholly new and redundant undersea cable, it follows logically that PRT's transmission costs are going to resemble its current costs for such capacity. Indeed, when these actual costs are inserted into the discernible mechanisms of the CAM, the result is similar to what would be expected. Therefore, the fact that the CAM version 3.2 result is so divergent evidences other methodological flaws contained within the model.

4. The Undersea Cable Module Relies on Unsupported Estimates of Capacity Needs.

The undersea cable capacity requirements for the insular carriers estimated by the CAM version 3.2 are developed by multiplying total customer locations by the assumed take rate of 80 percent and busy hour bandwidth factor. The bandwidth factor input is found in the Bandwidth V1 Input file provided with the model's two new undersea cable solutions. The input table, reproduced in its entirety below, is a nationwide input that does not vary by carrier or state. Based on the limited description found in the CAM version 3.2 Methodology document, the factor represents the expected busy-hour throughput. However, this input has never been vetted as part of this proceeding, as the Methodology indicates that—prior to the inclusion of the undersea module—it was not used by the model to develop cost.[54] The busy-hour factor should incorporate several variables, including average usage levels and oversubscription assumptions. Because there is no description as to the source or calculation of the busy-hour factor, there is no way to identify these variables. As a result, it is difficult to give the busy-hour factor variable serious analytical review.

[54] *See* Methodology at 62.

IV. CONCLUSION

From the start, the Commission has recognized the need to address the "unique circumstance" faced by insular service providers in this proceeding. However, as described above and previously by PRT, the proposed CAM does not adequately address the needs of insular areas. There are significant legal infirmities with the process the Bureau has followed in executing its delegated authority to develop the CAM, which could call into question the fundamental legality of the end result. Moreover, while the Bureau has taken steps to try to improve the model, it still fails to accurately reflect the reality of service provision in insular areas, and as a result use of the model would severely underfund broadband deployment in these areas, contrary to the express direction of the Commission and federal policy. Accordingly, PRT urges the Bureau to base its decisions on the Commission's clear instructions and ensure that insular areas are treated fairly during CAF Phase II by either accommodating them through a transparent model or by maintaining their frozen support.

Respectfully submitted,

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